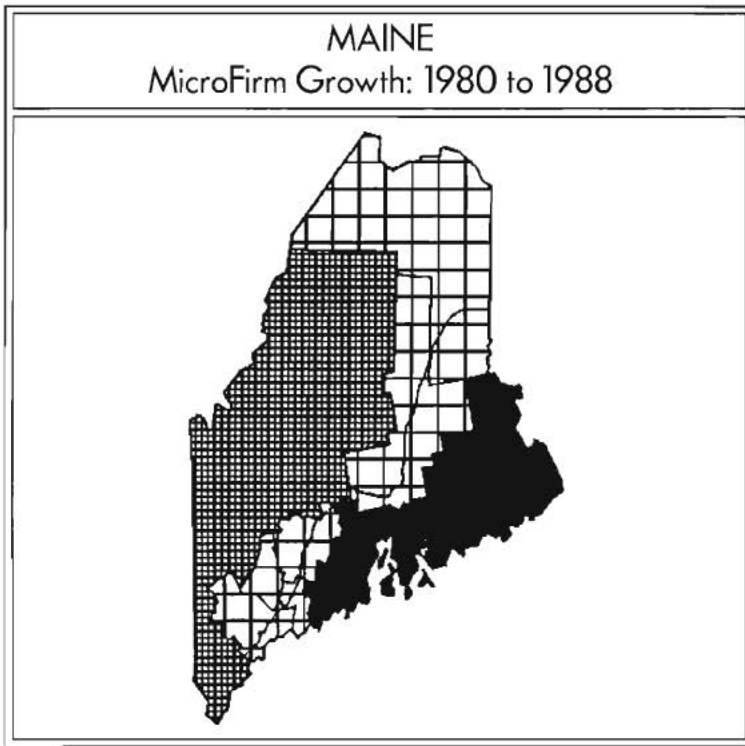


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## **Firm Formation, Firm Failure, and Competitiveness: An Overview of Maine's Entrepreneurial Economy**

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# Firm Formation, Firm Failure, and Competitiveness: An Overview of Maine's Entrepreneurial Economy

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## INTRODUCTION

There is a growing body of evidence to support the contention that economic growth is inextricably linked to a vibrant entrepreneurial base of smaller firms. Innovation as measured in patents and new products and services is a distinguishing characteristic of small firm performance. Studies have found smaller companies to be more efficient producers of innovations with a ratio of innovations to research and development expenditures up to four times greater than that of large firms (U.S. Congress 1979; NSF 1984; Acs & Audretsch 1990). In an environment of relentless downsizing by corporate America, the creation of employment opportunities continues to be a notable activity of small firms. A 1992 business survey by the Dun & Bradstreet Corporation projected that almost 80% of the new jobs created that year would come from businesses with fewer than 100 employees; nearly 60% would come from businesses with fewer than 20 employees (Dun & Bradstreet 1992). Virtually all of the net new jobs created in the U.S. between 1988 and 1990 came from firms with fewer than 20 workers (SBA 1992). Small firms are also surprisingly profitable. Between 1972 and 1976, manufacturers with less than \$1 million in assets produced a higher return on equity than those with more than \$1 billion in assets (Daniels & Kieschnick 1978). During the recent recessionary period, proprietorship and partnership earnings in fiscal 1991 increased 4.2% (U.S. SBA 1992). As the state of Maine grapples with strategies for taking part in the changing global economy, Maine's transition toward an entrepreneurial economy may provide the basis for enhanced competitiveness.

As development officials seek to create policies that stimulate the growth of small firms at the state and local level, a new understanding of the entrepreneurial dynamics in the Maine economy will be needed. At present, no accurate data to portray business starts and failures are available that focus on the various size categories of firms. This limits the ability to focus upon the entrepreneurial role of smaller businesses. Firm formation rates measure the number of new incorporations and indicate willingness to assume risk as well as perceived opportunity. Positive firm formation rates are critical to replace the average 8% annual loss that occurs within a region's economic base (Birch 1987). Conversely, higher than average failure rates suggest a competitive disadvantage and perhaps long-term decline of the region. The overall competitiveness of the state's entrepreneurial base will become an important contributor to ultimate success in the global economy.



In recent analyses, insufficient attention has been given to the differential impact that economic restructuring has had upon various regions within the state of Maine. A renewed emphasis on the valuable role of small business in Maine's economy reinforces the need to examine its entrepreneurial component from a regional perspective. This will be key to determining whether an emerging entrepreneurial economy has created new opportunities and convergence between the economies of southern Maine and the rest of the state, or if instead the divergence first perceived in the early 1980s has continued to widen the economic gap.

The purpose of this paper is to establish a basic understanding of Maine's entrepreneurial economy. The competitiveness of Maine's small businesses, reflected in rates of firm formation and firm failure, is important to future economic growth and policy development. Previous research has pointed to the high proportion of small businesses operating in Maine, but questions concerning their entrepreneurial dynamism remain unanswered. Developing a useful policy response for future economic growth dictates that the following questions be fully explored:

1. What is the current state of Maine's entrepreneurial base and how does this base compare with other states in the New England region?
2. How is this base changing with respect to firm formation and business failures, and are there sectors of emerging strength and competitiveness?
3. Are there rural/urban differences that form a potential basis for policy differentiation?
4. What are the crucial elements of entrepreneurship and associated policy development for economic growth in Maine?

## DEFINING AN ENTREPRENEURIAL ECONOMY

Competitiveness, and the economic growth that flows from it, has become a central feature of economic development policy throughout much of the United States. Policymakers at the federal, state, and local levels of government regularly propose strategies to encourage advances in productivity as the basis for competitiveness and higher standards of living. To generate sustainable high rates of economic growth, however, requires more than occasional boosts in economic performance measures. Temporary increases that come about from additional investment in plant and equipment and in public infrastructure cannot sustain continually rising rates of

economic growth. Elevating the pace of economic growth is possible only through a steady flow of technological innovations and associated improvements in human capital. Ultimately, the forces that drive long-term growth are different from those that effect short-term fluctuations, and therefore different kinds of policy interventions are required (Solow 1992).

A characteristic of entrepreneurial economies is their ability to serve as a wellspring of new initiatives from which new enterprises and entire new industries emerge. Researchers examining the concept of small firm "seedbeds" have determined that truly entrepreneurial activity is essentially innovative rather than a source of increased rivalry within existing industries (Beesley & Hamilton 1984). The trial and error process that is reflected in high rates of firm formation and business failure is characteristic of dynamic seedbed activity and explains the correlation between entrepreneurship and innovation. Thus, policy initiatives directed at long term economic growth through the stimulation of entrepreneurial ventures necessarily must be tolerant of a concomitant increase in business failures.

The effectiveness of policy making aimed at entrepreneurial development depends in part on the ability to accurately define and measure specific aspects of small business and entrepreneurship. The ambiguity that accompanies terms such as "entrepreneurship" and "small business" reduces their effectiveness for policy development. Part of the problem lies in the inability of a singular definition to accurately capture what is often a complex concept. The problem is exacerbated further by the variety of small business definitions that are used by investigators in the field of entrepreneurial research.

At the national level, the Small Business Administration (SBA) has defined small business differently at various points in time. In the 1950s, the threshold for "small" depended upon different levels of employment, or annual sales, depending upon the specific industry. In the 1980s, the thresholds were adjusted in response to what the SBA viewed as an overall increase in the sizes of businesses. The typical categories presently in use by the SBA include fewer than 20 employees, very small; 20–99 employees, small; 100–499 employees, medium-sized; and 500 or more employees, large (Blackford 1991).

Entrepreneurs often are viewed as the founders and/or owners of small businesses. Moreover, entrepreneurship also has been defined qualitatively as a set of attributes that characterize the drive, capabilities, and organizational skills needed to obtain and manage the variety of inputs required for a successful business

venture. Functional definitions reflect the operating tendencies of small businesses as defined by sales, employment, or capitalization. Principally, small firms are seen as more dependent on local markets for sources of raw materials and as outlets for finished products; having higher unit costs of production; operating as one-plant establishments; and more dependent on larger firms (Wortman 1987).

A more useful definition might address the innovative aspects of entrepreneurial firms. The evidence in this regard suggests that innovation is in large part the domain of small firms. A widely cited study by the National Science Foundation in the early 1980s found that small firms produced 24 times as many innovations as large firms, and 4 times as many as medium-sized firms. Smaller companies also were found to be more efficient producers of innovations, with a ratio of innovations to research and development expenditures four times greater than that of large firms (NSF 1984). More recently, the SBA has concluded that small firms produce twice as many innovations per employee as large firms, and that more than half of all U.S. product and service innovations since World War II have been developed by independent entrepreneurs (U.S. SBA 1992).

Despite the desirability of particular definitions, the use of existing secondary data imposes practical limitations on the precision with which entrepreneurs may be identified. Standard data series furnished by the federal government have the principal benefit of permitting regional, state, and sub-state comparisons. The chief criticisms of the use of secondary data for entrepreneurial research lies in the need to define entrepreneurs according to somewhat arbitrary size or organizational attributes that are deemed the most suitable. As a result, definitions of entrepreneurs tend to be shaped by characteristics prescribed by particular data series. For purposes of comparability, the data for this study are derived primarily from two national sources: the U.S. Dept. of Commerce's County Business Patterns; and the U.S. Bureau of Economic Analysis' Regional Economic Information System.

The two data sources used to measure small business activity reflect alternative approaches for defining entrepreneurs. County Business Patterns provides information for all establishments that have at least one paid employee and includes numbers of establishments, employees, and payrolls, broken down by industry category and by size of establishment (size defined by level of employment). There is no distinction made for the form of business organization assumed by specific establishments. Therefore, the category of

firms with 1–4 employees might include proprietorships, partnerships, or corporations. The U.S. Bureau of Economic Analysis (BEA) reports the numbers and incomes of full-time and part-time sole proprietorships, irrespective of the size of the business entity.

In general terms, the two data series present information on very different types of businesses. The minimum employment threshold of one employee for inclusion in County Business Patterns results in the smallest category of firms (1–4 employees) having fewer and on average, larger establishments than are found in the BEA reports of proprietorships. Since the definitions are not mutually exclusive, estimates of small business activity must take into account the overlap between the two data sources. It is likely that most establishments with 1–4 employees are organized as sole proprietorships, resulting in possible double counting of small establishments if data are combined without adjusting for the overlapping definitions.

A third source of data regards the dynamism of economic activity and is useful as an indicator of statewide industry competitiveness. The Dun & Bradstreet Corporation has systematically tracked the incidence of new business incorporations and business failures for all companies in the United States since at least 1980. The Dun & Bradstreet data serve as a useful guide by which to gauge general economic activity, but do not provide a clear indication of the performance or competitiveness of various size categories of firms. A criticism of past studies that utilized the Dun & Bradstreet database has been the lack of coverage specific to the smaller firm sector (Birley 1986; Acs & Audretsch 1990). Expanded coverage starting in 1984 appears to have addressed at least a part of this issue. Dun & Bradstreet lists 38,824 firms in Maine in 1989; County Business Patterns lists 35,695 businesses with at least one employee.

In 1989, 278,000 New England businesses, or three-quarters of all establishments with employees, had fewer than 10 workers, and 87% of businesses employed fewer than twenty. A smaller category, those with only 1 to 4 workers, accounted for 54% of all establishments. All figures omit those establishments that have no employees. When defined by form of organization, small businesses operating as full-time and part-time sole proprietorships represent the smallest category of businesses and clearly are the most numerous. In New England, businesses of all sizes and types but with at least one worker during 1989 numbered approximately 375,000. That same year, BEA reports that there were over 1.1 million sole proprietorships in operation. Therefore, there must have been at

least 725,000 full-time and part-time proprietorships in New England with no employees. Even assuming complete overlap between the category of establishments with 1–4 employees and those defined as sole proprietorships (i.e., all establishments with 1–4 employees are organized as proprietorships), businesses with fewer than 5 employees account for approximately three-fourths of all businesses.

### Entrepreneurs in Maine

The prevalence of smaller firms in Maine is evident; 78% of businesses listed in County Business Patterns had fewer than 10 employees in 1989, and 89% of businesses had fewer than 20 employees. Altogether, establishments in Maine with between 1 and 19 employees numbered almost 32,000. During that same year, the number of businesses organized as sole proprietorships in Maine was nearly 127,000. The high incidence of small business in Maine conforms to the general tendency of rural areas to exhibit a higher proportion of small firms. The graph in Figure 1 shows clearly the consistently higher incidence of proprietors in the northern New England states of Maine, New Hampshire, and Vermont. Nationally, Maine's proportion of proprietorships ranks sixth highest, behind Montana, Vermont, Colorado, Alaska, and New Hampshire. Two other phenomena are notable in the chart: (1) the proportion of proprietors to total employment has steadily increased in all areas over the past 20 years; and (2) the disparity between numbers of rural and urban proprietorships has increased over the past two decades. Similar relationships and trends exist for establishments with 1–4 employees as compared to all establishments with some level of employment.

In addition to the numbers of smaller businesses, an important issue for public policy is the level of employment that is associated with various sectors of the economy. If economic sectors can be defined in terms of establishment size rather than the more traditional breakdown along industry lines, then the dominant numbers of establishments in the small business sector do not necessarily translate into equally dominant levels of employment. Among all establishments with at least one employee, those with fewer than 5 workers (20,657 in Maine, 1989) accounted for 58% of businesses, but employed fewer than 8% of all wage and salary workers (i.e., persons who are employed by a business establishment that they do not own). Even all businesses of up to 20 employees in size account for only one-third of total employment.



## NEW ENGLAND PROPRIETORS

As A Percentage of Total Employment

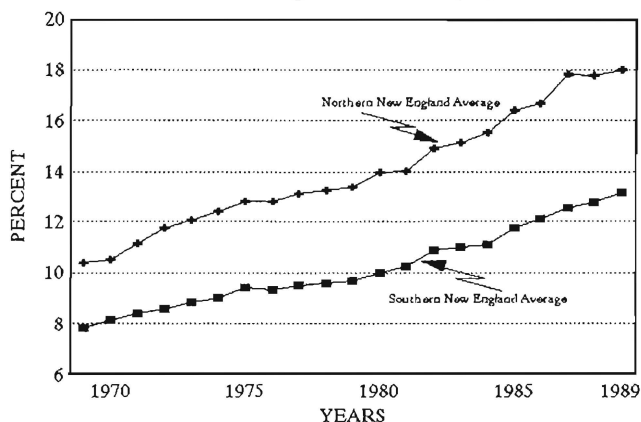


Figure 1. The diverging proportion of proprietors between rural and urban New England states, 1969–1989.

Within Maine, small firms represent the greatest percentage of all businesses in those counties within the coastal and western areas of the state. These two regions are separated geographically by a more urbanized corridor which runs the length of Interstate 95 and includes the majority of counties where small firms are a smaller part of the total number of business establishments: over 68% of firms employ 1–4 workers in coastal Waldo and Lincoln Counties; only 51% in Androscoggin County and 53% in Cumberland County employ 1–4 workers. This particular configuration may be the result of growth patterns that took place during the 1980s when the numbers of small firms increased fastest in the coastal and western areas (Figure 2).

The geographic patterns described above for firms with at least one employee but fewer than five employees also hold true for the category of smallest establishments, the sole proprietorships. They clearly represent a greater proportion of establishments in the coastal and western counties and are relatively least important in the urbanized southern and corridor counties (Figure 3).

Distributions of business establishments by size varies considerably across major industry sectors. The smallest firms are most characteristic of the Agricultural/Forestry/Fisheries, Construction, Services, and Finance/Insurance/Real Estate industries. The con-

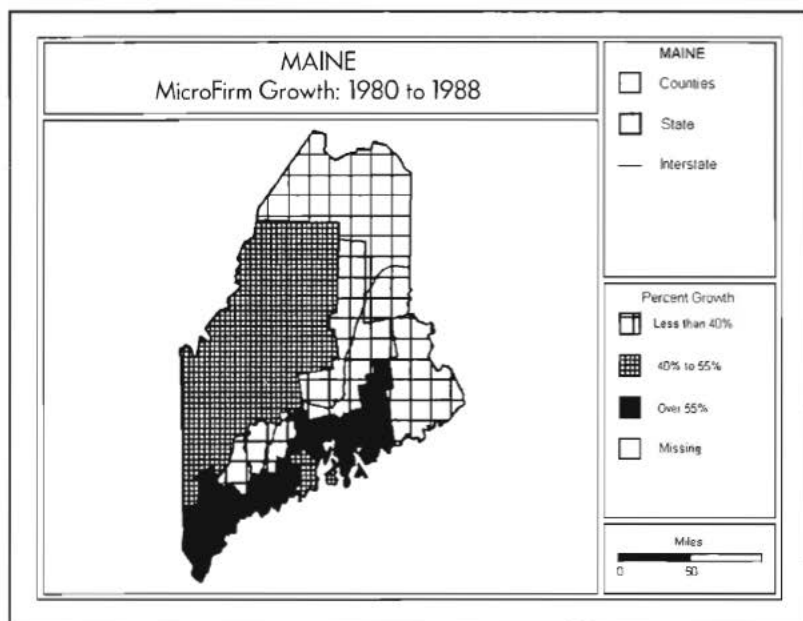


Figure 2. Geographic patterns of small business growth in Maine, 1980–1989.

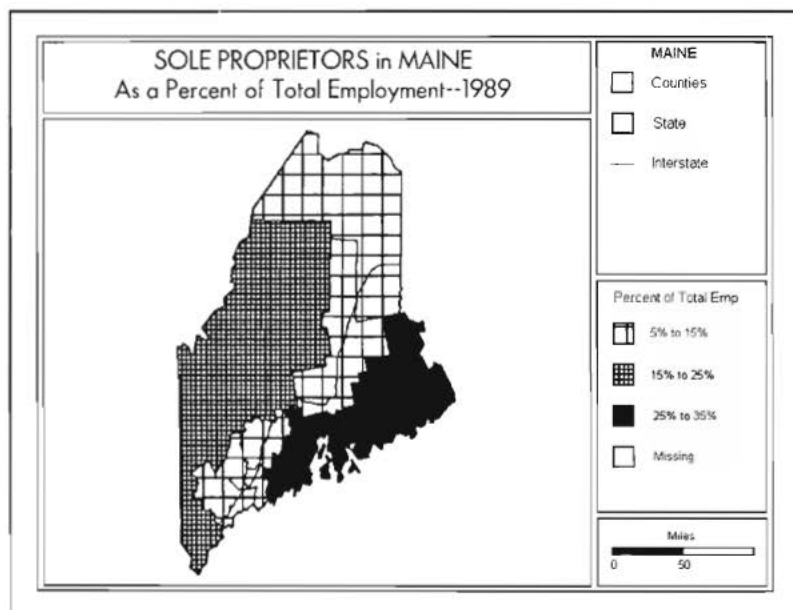


Figure 3. Geographic patterns of proprietorship in Maine, 1989.

centration of small firms in the Agricultural/Forestry/Fisheries industries (72.7% of all establishments) and Construction industry (65.5% of all establishments) is more than double that of the manufacturing industry (30.1% of all establishments). Small manufacturers, in particular, present an interesting pattern of geographic location. Considering the population of all businesses that employ between one and four workers, manufacturing is relatively most important in the western and northern counties. This corresponds to earlier research findings that manufacturing establishments of all sizes represent a larger part of rural economies, while service industries tend to locate in more urbanized areas.

## THE ENTREPRENEURIAL ECONOMY OF MAINE

The end of the 1980s has been represented as the culmination of a fundamental restructuring of the basis for economic competition in Maine. The rise of new manufacturing industries, revitalization of existing traditional sectors, decline of some mature industries, the emergence of services as a dominant industry, and a new broadened presence in international markets may be the expected responses to forces that shape long-term growth. It remains to be seen, however, whether the recent economic downturn which began in 1989 was merely a short-term fluctuation along the path to sustainable growth, or an indication of a more generalized retrenchment leading to a prolonged period of limited development. A key test of the state's ability to move beyond its present plateau of economic performance will be the emergence from within of heightened research and development activity and innovation spurred by entrepreneurship.

The period from 1982 to 1989 was one of steady growth in the national economy. During that period, the economy of Maine also experienced very high levels of growth, leading some observers to suggest that the state had entered a period when policymakers "will increasingly be managing the problems of prosperity rather than those of poverty" (Irland 1989:15). Per capita income in the state rose considerably, raising the state's ranking from 42nd in the nation to 26th, and the addition of 153,000 jobs pushed employment to record levels. Key factors in the job growth were (1) expanded residential and commercial construction (40,000 direct and indirect jobs); (2) national defense buildup (18,000 direct and indirect jobs); and (3) personal consumption and retail spending (7,000 additional jobs) (Adams 1992). Since then, income growth has stalled, Maine's ranking has declined, and the state has lost many of the jobs that

were gained during the preceding decade. In 1991, Maine had the 6th lowest increase in per capita income in the nation; during the two-year period from 1991 to 1993, Maine had the second lowest income growth. And although Maine's per capita income had risen from 84% of the national level in 1979 to 91% of the national level in 1989, it nevertheless was equal only to 76% of the New England average by 1989. Nonagricultural employment in the state declined by 29,800 jobs, from 541,900 in 1989 to 512,100 in 1992.

The state's historically high proportion of smaller firms raises the question of the role of Maine's entrepreneurial base in the creation of new businesses and associated employment. Table 1 presents several measures of employment and economic activity for Maine and the New England region that reflect the role of different sizes of businesses. Both total employment and the total number of business establishments in the state increased more than in the New England region; Maine trailed only New Hampshire when compared to each of the New England states. The greatest increases in both employment and numbers of establishments occurred in firms that employ between 5 and 19 workers, and the smallest percentage gains were in the category of large firms (over 100 employees). Employment in the 5–19 category of firms increased almost twice as much as in the smallest category (1–4 employees), and was more than double the increased employment in the largest category of firms. The number of establishments with 5–19 employ-

Table 1. Percentage change in selected business indicators between 1982 and 1989 in Maine and New England, by size of firm.

	----- Establishment Size (Employees) -----				
	1–4	5–19	20–99	100+	Total
	----- Percentage change -----				
Employment					
Maine	25.6	50.2	47.3	23.1	39.8
New England	22.0	35.1	31.1	18.8	27.4
Establishments					
Maine	51.1	56.4	48.5	26.2	52.7
New England	41.1	40.0	34.5	26.0	39.3
Average Size					
Maine	-16.9	-3.9	-0.8	-2.5	-8.5
New England	-13.5	-3.5	-2.5	-5.7	-8.5

ees increased somewhat more than the smaller firms (56.4% versus 51.1%) in Maine, while in most New England states the reverse was true. Interestingly, the average size of business establishments decreased in all size categories in both Maine and New England. (Average size was calculated as total employment divided by the number of establishments in a given size category.)

Equally important indicators of entrepreneurship are the dynamic forces that produce change—start-ups, failures, expansions, and contractions of businesses. The Dun & Bradstreet Corporation publishes several statistical series of business and industry activity that serve as useful indicators for comparing Maine's rate of entrepreneurial activity to other states in New England. During 1992, new businesses incorporated in Maine at a rate that was lower than for any other state in New England. At the same time, business failures in the state also were among the lowest in the region (Table 2). This suggests a relatively low level of activity, at least among firms listed in Dun & Bradstreet data files. Entrepreneurial activity in recent years among the smallest firms is not clearly discernible from the Dun & Bradstreet data, and information similar to that presented in Table 1 is not available to portray the role of variously sized firms during the latest economic downturn. However, there are reliable indicators that entrepreneurship provides a stabilizing force during periods of economic dislocation. Employment patterns since 1969 show that while numbers of wage and salary workers (employees) have been negatively affected during the recessionary periods in 1975, 1982, and 1989, the numbers of proprietorships continued a steady pattern of uninterrupted growth. Measured another way, the number of working people who are not part of any

Table 2. New business incorporations and business failures in the six New England states, 1992.

State	New Business Incorporations		Business Failures	
	Number	Rate*	Number	Rate*
Maine	2,431	472	464	90
New Hampshire	2,577	523	720	146
Vermont	1,589	577	259	94
Massachusetts	12,197	545	3,021	135
Connecticut	7,339	516	1,224	86
Rhode Island	2,553	664	511	133

\*Rates listed are per 10,000 firms.



company payroll varies inversely with overall economic conditions. As the Maine economy began to decline starting in 1989, the number of self-employed increased from 46,000 in 1988 to over 104,000 by 1992 (Adams 1992).

### **The Question of Business Failures**

A long-held doctrine of small business research that attests to the high failure rate of entrepreneurial ventures has been challenged by newer research. Until recently, there has been general agreement that new, and especially small, businesses experience high rates of failure (Miller 1985; Reynolds 1987). The most widely quoted statistic states that approximately 80% of new businesses fail within five to ten years. A 1992 report by the Small Business Administration contends that 62% of new business do not survive longer than six years. Findings such as these have now come into question by research that takes a more careful look at the definition of failure. By controlling for such events as changes of ownership and incorporation of existing businesses, Kirchoff concludes that only 18% of firms fail after 8 years, and that over 25% of previously reported business deaths are the result of voluntary terminations involving such occurrences as the retirement of the proprietor (Aley 1993). Even among failed businesses, nearly two-thirds survive longer than five years (Dun & Bradstreet 1993). Buss and Lin studied businesses in three states and found survival rates that ranged from 51% after 8 years in Arkansas to 90% in 5 years in Maine (Buss and Lin 1990).

The lack of consistent measures and methodology precludes the ability to compare findings of failure studies across states and over time. The limitation on comparability can be alleviated somewhat by the use of a single data source while recognizing its inherent constraints. In business failure data published by the Dun & Bradstreet Corporation, Maine consistently posted the highest rates of firm failure among all New England states from 1980 to 1983 (see Table 3). The business failures monitored by Dun & Bradstreet include firms that have ceased operations following assignment or bankruptcy, ceased operations with losses to creditors, voluntarily withdrew leaving unpaid debts, or voluntarily compromised with creditors. Businesses that discontinue operations for reasons such as ill health, retirement, or inadequate profits are not included. In 1984 Dun & Bradstreet revised their failures database by including previously omitted industry sectors, including "Agriculture, Forestry and Fishing"; "Finance, Insurance and Real Estate"; and "Services". Since the revised statistical coverage in 1984, Maine's

Table 3. Business failure rates in Maine and New England 1980 to 1992.

Year	Rate <sup>1</sup>	Business Failures	
		Maine Rank <sup>2</sup>	New England Rate
1980	46	1	31
1981	61	1	38
1982	76	1	43
1983	72	1	54
1984	45	3	44
1985	33	4	43
1986	n.a.	n.a.	n.a.
1987	20	4	30
1988	30	5	32
1989	34	2	29
1990	47	5	69
1991	77	4	110
1992	90	5	117

<sup>1</sup>Rates listed are per 10,000 firms.

<sup>2</sup>Rank is among the six New England states.

failure rate has ranged from second highest to second lowest among the six New England states. The consistency with which Maine had the highest failure rate during the first four years of the 1980s, before the revision, raises concern for whether the state's failure rates among the initially covered industries are still among the highest in the region.

The data published by Dun & Bradstreet do not make possible an analysis of failure rates within industry sectors at the state level of disaggregation, although several explanations can be proposed. First, the three industry sectors added to the Dun & Bradstreet database in 1984 do have lower failure rates than the overall average for the U.S. economy. If Maine's economy has a disproportionate share of businesses in these sectors, then their inclusion in the database might reduce the state's failure rates relatively more than in other states. Second, failure rates in Maine among the added industries may be lower than for the same industries elsewhere, and even without a disproportionate share of these industries, their addition could have the effect of reducing the state's overall rate of business failures more than in other states. Failed service sector businesses in Maine represented between 17% and 22% of all failures in the state in 1989 and 1990. Nationally, service industry failures accounted for 27% to 29% of failures. The difference is

largely due to services being a larger part of the national economy than the Maine economy. Finally, there may have been an overall greater reduction in the state's failure rates around 1984, regardless of the industries involved.

This issue was analyzed in greater detail by using industry-specific data for each of the New England states (published in County Business Patterns) in combination with the actual numbers of failures provided by Dun & Bradstreet. This provided a means of adjusting reported failure rates to account for the changes in industry coverage which took place starting in 1984. For all of the New England states except Massachusetts, failure rates are reduced by the addition of the three previously excluded industry sectors. In most states, the "Finance, Insurance & Real Estate," "Services," and "Agriculture, Forestry and Fishing" sectors have failure rates that are less than the overall average, and their inclusion has the effect of lowering the overall average failure rate. The rate at which businesses in the appended industries fail in Maine is not significantly different from that in other New England states, and therefore is not the source of improvement in Maine's rankings. Finally, Maine's improved ranking in failures relative to the other New England states is not affected by the expanded industry coverage in the years after 1984. This suggests that both real and relative improvements in the rate at which businesses fail in Maine have taken place since about 1984.

#### **New Business Starts in an Entrepreneurial Economy**

The creation of new businesses, from craft-oriented proprietorships to international corporations, has long been perceived as a measure of economic fortune and the foundation for societal growth and prosperity. For that reason, the dislocation of more than 4.2 million workers between 1980 and 1992 involving Fortune 500 companies has created substantial concern for employment opportunities in the American economy of the future. Despite the significant loss of jobs associated with large firms, total employment in the U.S. increased by over 18 million jobs between 1980 and 1992. To a great extent, the jobs that are being created are found in smaller and medium-sized companies. Between 1976 and 1986, while employment in large manufacturing firms decreased by 100,000 jobs, small manufacturers created 1.3 million new jobs (Acs & Audretsch 1990). Duncan (1993) portrays the downsizing among many large companies during the latter part of the 1980s and into the 1990s as the result of vertical disintegration involving companies that spin off ancillary and support functions to focus on

corporate strengths. The resulting transformation creates opportunities for smaller firms to emerge as suppliers of the necessary business services that are no longer available in-house to the large firms.

The precise source and number of new jobs is not easily determined. Between any two points in time jobs are created and lost as new ventures are started, companies expand or contract, and businesses fail. In most cases, the only indicator of job growth or loss is the net change in the numbers of establishments and related employment. While this provides no measure of the level of dynamic activity, it nevertheless is a useful indicator of overall industry performance. Several approaches, employing various data sources and levels of detail, have been used to track job generation. With some variation in the specificity of results, most studies conclude that newer and smaller businesses are the principal creators of new jobs (Birley 1986; Birch 1987; Reynolds 1987). One easily discernible measure of industry dynamics is the occurrence of new incorporations. By definition, new incorporations do not include sole proprietorships, which is the form of business entity assumed by many of the smallest enterprises. Also, new incorporations as reported by the Dun & Bradstreet Corporation include both entirely new entities that incorporate at the outset of business operations, as well as existing businesses that choose to become incorporated after having operated as a sole proprietorship or partnership.

Historical data on new incorporations over the past ten years, presented in Table 4, show that the rate of new business incorporations in Maine has been lower than in New England overall for every year since 1981 (data are not available for 1986). Further, Maine consistently has had the lowest rate of new incorporations of all the New England states for every year since 1981. (The significant change in rates after 1983 reflects the revision in Dun & Bradstreet's statistical series starting in 1984.) It may be helpful to note that the New England region overall has been slow to rebound from the latest national economic recession—New England is the only one of the nine census regions in the U.S. to have recorded a decline in the total number of new incorporations during 1992 as compared to 1991.

There is some question whether new business incorporations are an accurate measure of entrepreneurship because that is the form of organization that is least utilized by the very small business establishments that are more prevalent in rural economies such as Maine's. As described earlier, Maine has a large proportion of very small businesses, but the significance of small business as an

Table 4. New business incorporations in Maine and New England, 1981 to 1992.

Year	New Business Incorporations		
	Maine Rate <sup>1</sup>	Rank <sup>2</sup>	New England Rate
1981	1,521	6	1,926
1982	1,445	6	1,768
1983	1,630	6	1,888
1984	965	6	1,160
1985	1080	6	1,340
1986	n.a.	n.a.	n.a.
1987	1051	6	1,233
1988	1095	6	1,224
1989	760	6	805
1990	578	6	806
1991	452	6	562
1992	472	6	541

<sup>1</sup>Rates listed are per 10,000 firms.

<sup>2</sup>Rank is among the six New England states.

indicator of an entrepreneurial economy also is questionable. The relation between a high proportion of proprietors or very small businesses and the ruralness of an area may be more a reflection of a lack of employment alternatives than of an entrepreneurial culture. In Maine, the number of self-employed people statewide has varied inversely with overall economic conditions for at least the last two decades. As the state's economy declines, the number of self-employed increases, and as the economy improves the number of self-employed falls (Adams 1992).

### Competitiveness of Maine Industry

The ability to exploit opportunities presented by linkages to outside economic forces lies in the competitiveness of Maine's industries. Indicators of competitiveness of Maine businesses within the New England region can be found in rates at which new businesses are incorporated and existing businesses fail. As shown previously, businesses in Maine failed at the highest rate in New England during the early part of the 1980s. Maine's rankings improved starting in 1984, when the Dun & Bradstreet Corporation expanded the industries covered by the failure reports to include "Agriculture, Forestry and Fishing"; "Finance, Insurance, and Real Estate"; and the "Services" sectors. An analysis of the failure data

suggests that the expanded industry coverage had only a small part in reducing the state's overall failure rate and that there has been a real improvement in Maine business failures relative to the other New England states.

Table 5 presents the results of a shift-share type analysis based upon rates of failure in Maine and using New England as the reference economy. In a shift-share analysis, economic change as measured by some variable is divided into three components. The first is the local (Maine) growth that is stimulated by overall changes in the New England economy (the "Regional Growth" component). The analysis asserts that all sectors in Maine should have at least this much growth. The "Industry Mix" component is based upon concentrations in the state of relatively faster or slower growing industries. Finally, the "Competitive Share" is due to industries in Maine that are growing faster than the New England average for those same industries. If it can be assumed that the rate at which firms in a particular Maine industry fail is an overall indication of the ability of that industry's businesses to compete against its counterparts in New England, then it should be possible to disaggregate the total number of failures in an industry according to the regional forces that affect it. The Dun & Bradstreet Corporation reports a total of 199 business failures in Maine in 1990 out of a total of 34,840 businesses listed by County Business Patterns, for a statewide rate of 57 failures per 10,000 businesses. The column labelled "Regional Failure" (the failure analog to Regional Growth) indicates the number of failures that would have taken place in Maine had all Maine industries experienced the overall regional failure rate of 84 per 10,000 businesses. Overall, the regional effect would have increased the total number of failures in Maine to over 293 business, but because Maine's rate of business failure was less than the New England average, the "Competitive" effect reduced the number of failures by 94 businesses. The column headed "Industry Mix" relates Maine's industry concentration to the regional performance of the industry as compared to the overall regional failure rate. The third effect, "Competitive Share" makes a direct comparison of an industry's failures in Maine to its counterpart in the regional economy. The sum of the three effects is equal to the total number of failures in a given industry in Maine.

The analysis in Table 5 shows that Maine fared better overall than the New England economy because it experienced a lower rate of business failures. This also is the case for the other states in New England except for New Hampshire, which had a statewide failure rate equal to New England's, and Massachusetts which had a much

Table 5. Regional effects on failure rates in Maine industries, 1990.

	Industries										
	Agric.	Mining	Constr.	Manuf.	Trans.	Whlsale	Retail	FIRE	Services	Unclass	Total
New England											
Base	6178	375	41675	25783	12626	23960	91888	28369	124369	11585	366799
Failures	33	0	474	234	82	172	636	137	1277	42	3087
Rate	53	0	114	91	65	72	69	48	103	36	
Maine											
Base	556	35	4540	2215	1571	1865	9437	2372	10926	1323	34840
Failures	3	0	46	9	22	11	57	11	35	5	199
Rate	54	0	101	41	140	59	60	46	32	38	57
Regional											
failures	-4.7	-0.3	-38.2	-18.6	-13.2	-15.7	-79.3	-20.0	-92.0	-11.1	-293.2
Industry Mix	1.7	0.3	-13.4	-1.5	3.0	2.3	14.1	8.5	-20.2	6.3	0.0
Competitive											
Share	0.0	0.0	5.6	11.1	-11.8	2.4	8.3	0.5	77.2	-0.2	94.2
Total Impacts	-3	0	-46	-9	-22	-11	-57	-11	-35	-5	

higher than average failure rate. Approximately 17% of the failures in Maine can be attributed to the state's particular mix of industries based upon New England-wide industry performance. This ranks Maine about in the middle of the New England states—Vermont's mix accounted for 26.5% of failures; only 8.3% of failures in Massachusetts related to that state's industrial mix. On the other hand, the competitiveness (or lack of competitiveness) of Massachusetts' industries accounted for the highest share of failures in New England (30.4%). Maine's industries ranked in the middle—only 6.0% of failures were associated with lack of industry competitiveness (Vermont and Connecticut had fewer failures related to industry competitiveness.)

The net effect of the competitive dynamics, firm failure and firm formation, is reflected in the overall growth or decline of Maine's industries. The Maine State Planning Office suggests that a significant portion of the growth during the 1980s came about as a direct result of temporary conditions in the regional economy. As these temporary forces have waned within the state and the region, future growth will be dependent upon the ability of Maine industry to compete within the emerging national and international economy (Adams 1990). Additional insight into the sources of change and competitiveness within individual size categories of Maine business is possible through a second shift-share type analysis that disaggregates changes within a specific size category into its three components: (1) Industry Growth—change due to growth in the overall New England economy; (2) Proportion Size Mix—change due to New England-wide growth of a specific size category of firms and the relative proportion of firms in that size category in Maine; and (3) Competitive Size Share—change due to the relative performance of a particular size category of firm in Maine compared to the same size category for New England overall. The baseline data from 1982 and 1989 provide the foundation for the analysis presented in Table 6.

Between 70% and 80% of the increase in the number of small- and medium-sized establishments during the 1980s is attributable to general growth in the regional economy. Had Maine's larger business sectors grown at a pace equal to the overall regional economy, they would have gained 60 more establishments (179) than actually occurred (119). The difference is attributed almost entirely to less than average performance of the large business sector in New England overall. The column labeled "Competitive Size Share" lists the proportion of change due to the competitiveness of a particular size category relative to similar sized firms throughout New England. The numbers suggest that Maine's large business



Table 6. Shift-share analysis of regional effects on establishment sizes in Maine industries, 1982 to 1989.

	1-4 Employees	5-19 Employees	20-99 Employees	100+ Employees	Total
<b>New England</b>					
Establishments					
1982	144168	87124	30616	268918	
1989	203370	121978	40830	8833	375011
Percentage Change	41.1	40.0	33.4	26.0	39.5
<b>Maine Establishments</b>					
1982	13671	7198	2162	454	23485
1989	20657	11255	3210	573	35695
Percentage Change	51.1	56.4	48.5	26.2	52.0
<b>Change in Number of Establishments Due to:</b>					
Industry Growth					
Component	5,393	2,840	853	179	9,265
Prop. Size Mix	220	40	-132	-61	0
Comp. Size Share	6986	4057	1048	119	12210
<b>Percentage of Impacts Due to:</b>					
Indus. Growth Comp.	77.2	70.0	81.4	150.5	75.9
Prop. Size Mix	3.2	1.0	-12.6	-51.3	0.0
Comp. Size Share	19.6	29.0	31.2	.8	24.1
Total Impact	100.0	100.0	100.0	100.0	100.0

sector performed on a par with New England's larger businesses and contributed little to the Maine economy through relative competitiveness. Approximately 20% of the increase in the number of smallest businesses reflects growth rates in Maine which surpassed New England's smaller business sector growth between 1982 and 1989. The most competitive size firm in Maine during that period, relative to New England, were those with 5-19 and 20-99 employees. Approximately 30% of the increase in those firms was attributable to growth rates over and above similar sized firms throughout the region.

## POLICY IMPLICATIONS FOR ENTREPRENEURIAL DEVELOPMENT IN MAINE

To understand the policy implications of the entrepreneurial economy for the state of Maine, it is necessary to examine the roles of firm formation, firm failure, and competitiveness within the specific contexts of development patterns within the state. The dynamics of business activity, and its potential contribution to economic growth, vary across individual industries. Rates of business failure in Maine during 1990 across broad industry sectors ranged from 0 per 10,000 in the mining industry to 140 per 10,000 business establishments in the transportation sector. Increases in the number of business establishments during the 1980s varied by over 400% between the slowest growing and the fastest growing sectors of the economy. This variation and the changing economic fortunes of industry sectors over time create opportunities for policymakers to initiate appropriate development strategies.

Forging economic development policy, however, is not a simple process of identifying competitive high-growth, high-wage industries as the prime targets of state-sponsored development efforts. The issue is considerably complicated by historical development patterns that have shaped the regional economies of Maine and the ensuing uneven distribution of sectoral employment. The manufacturing orientation that dominated Maine's growth since the turn of the century is still evident in much of the state, although reliance upon manufacturing for employment continues to decline, especially in the southern portions of Maine. In the southernmost counties of York and Cumberland, manufacturing provides approximately 17% of the area's jobs, while in the rest of the state manufacturing accounts for over 26% of total employment. Conversely, jobs in the finance, insurance and real estate sector constitute nearly 9% of total employment in the southern counties, but only 4.1% of jobs in the remainder of the state.

Concern for such regionally disparate patterns of growth peaked in the early 1980s. Shortly thereafter, strong economic growth throughout the remainder of the decade, combined with efforts to create a better understanding of the more complex dynamics of regional growth in the state, helped to defuse the perception that portions of Maine were inescapably destined to slow economic growth. The ensuing focus upon technological advances in telecommunications and innovations in flexible manufacturing processes that reduce the geographic barriers of distance and sparse population also created optimism for new economic opportunities in places outside of the southern portions of the state. At its peak, the

apparent restructuring of Maine's economy during the 1980s was portrayed as leading to an "economic renaissance" with new opportunities for all Maine citizens in the national and international economy (Adams 1990).

During this period, a shift in state government policy toward "managing prosperity" by controlling growth as the way to minimize its negative impacts on local communities left the state ill prepared to deal with the sudden economic downturn at the end of the decade. During the growth period of the 1980s, economic policy and recommended development strategies concentrated on exploiting the restructuring of Maine's economy by promoting and encouraging expansion of newly emerging industries in the state, such as metals, machinery, electronics and biotechnology (Maine Development Foundation 1984; Maine Science & Technology Board 1986). Localized economic dislocations caused by the decline of some industries during the restructuring became the target of ad hoc "rapid response" teams made up of public agency officials to coordinate the efficient application of appropriate government resources for worker retraining (Maine Dept. of Economic and Community Development 1988). Such efforts, and state government's ability to fund them, eventually became overwhelmed by the subsequent economic recession, and the ensuing programmatic retrenchment created a void in the state's approach to economic development. The present lack of a long-term, statewide development strategy has magnified the concern for future economic viability in portions of the state where economic restructuring has not provided significant advances in employment, wages, or incomes. It is likely that the more rural areas of the state are not destined to slow growth indefinitely. However, recent history highlights the need for development policy that is sensitive to the differential regional economies of the state and the dissimilar impacts that uninformed policy can create.

The regional variations that are an important part of the state's character often are overshadowed by overall measures that inaccurately portray the state as a homogenous whole. This is particularly problematic when policy decisions have statewide implications. As an example of this skewed perspective, figures compiled by the National Science Foundation consistently rank Maine at or near the bottom in terms of both public and private sector dollars spent on research and development (R+D) activities (NSF 1986; MSTC 1992). Despite the longer-term ramifications, legitimate consideration in the R+D policy debate frequently is diverted by the rationalization that R+D spending within the state's borders is not crucial since Maine is in close proximity to some of the most advanced educational and research resources in the country

(Blom 1993). If the spillover effects of growth in the greater Boston area are deemed partly responsible for the strong economic performance in the southern parts of Maine, then it is reasonable to assume that much of the rest of the state is too distant to have benefited substantially from Massachusetts-based economic growth and Massachusetts-based research and development activities.

Specific recommendations for a pro-active development policy which do not consider regional variations can further exacerbate discrepancies in economic opportunity. A set of criteria recently offered for consideration in policy development has its foundation in statewide income, employment, and population projections that are published by the U.S. Bureau of Economic Analysis (McMahon 1993). It is suggested that differential growth rates and earnings projections form the basis for identifying appropriate industries as the focus for state government development efforts. One of those criteria centers on potential employment growth, based on the rationale that state government should identify competitive industries likely to experience future growth rather than expend limited resources on declining industries. Secondly, it is suggested that policies that encourage expansion of low-wage industries would serve only to depress the state's average wage, with the implication that such policies should be avoided.

While such recommendations are appropriate in a homogeneous economic landscape, the ramifications in a regionally variegated state are important. To disregard apparently low-wage industries from a statewide perspective overlooks regional contributions. At a broad industry level, manufacturing is ranked fourth out of eight sectors in terms of average wages<sup>1</sup> paid to employees. To disregard manufacturing on the basis of this measure would be to ignore that it is the highest wage sector in the 14-county region exclusive of York and Cumberland counties.

Concentrating upon state-level indicators of wages and growth likely would create the unintended consequence of widening the economic gap between the southern portions of the state and the rest of Maine. Employment in the ten specific high-growth, high-wage industries proposed as the focus of state development policy is disproportionately located in York and Cumberland counties. At present, over 41% of jobs in the identified industries are in those two counties, and over three-quarters of the associated jobs are in industries that have been growing faster in York and Cumberland counties than in the remaining fourteen counties. Over 70% of the

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<sup>1</sup>Average wage is calculated as total wages paid in an industry divided by number of employees. The resulting average wage takes into account the incidence of part-time and seasonal employment.

new Maine jobs created in the high-paying "Finance, Insurance & Real Estate" (F.I.R.E.) sector between 1982 and 1989 are located in the two southern counties. If the growth trends of the past decade continue, southern Maine's portion of the identified high-wage jobs will expand from its present 41% share to over 48%. State government intervention to encourage still more rapid growth without sensitivity to the regional implications of policy likely would lead to an even greater disparity.

A closer look at the changes that took place within Maine's industries helps to identify the forces that have led to a continuing divergence between southern Maine and the rest of the state. That Maine's economy continues to shift from a manufacturing orientation to a service based one is clear. In 1981 there were nearly 50% more manufacturing jobs than service jobs in Maine. During the 1980s, the number of manufacturing jobs declined and the number of service jobs increased, so that by 1991 the relationship had reversed to the point that there were 53.5% more service jobs than manufacturing jobs. These shifts have had a significant impact upon the relative economies of both southern Maine and the rest of the state. In 1991, manufacturing still provided the highest average wage jobs in the 14-county region outside of York and Cumberland counties. Yet during the prior decade while all other sectors increased employment, the number of manufacturing jobs declined 16.8% (-13,680 jobs). This was a greater rate of decline than had occurred in southern Maine where the manufacturing sector lost 14.8% (-4,743) of its jobs. Moreover, although average manufacturing wages had become significantly higher in southern Maine than in the rest of the state, they were merely the fourth highest paying sector in southern Maine. Four of eight industry sectors in southern Maine had higher average wages than the highest wage sector in the rest of the state. Other indicators of continuing divergence, including population growth, personal income, employment, and wages, are presented in Table 7.

Against this regionally and economically diverse backdrop, economic development policy also must recognize the distinct requirements of varying-sized businesses. Smaller, entrepreneurial enterprises generally are regarded as more flexible, innovative, and adaptable to emerging opportunities (Duchesneau & Gartner 1990). But their small size also places limitations on their ability to obtain investment capital, to penetrate new markets, and survive periods of negative growth. The role of "entrepreneurs" (defined here as self-employed persons) in the restructuring of Maine's economy is the only broad dimension in which there is evidence of converging

Table 7. Selected economic comparisons between southern Maine and the rest of the state, 1980 to 1989.

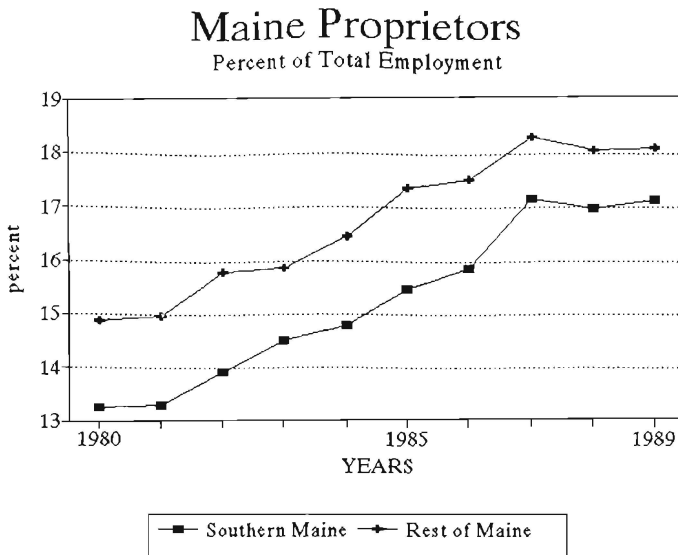
	Southern Maine	Rest of Maine
Population in 1989	409,300	812,600
Share of Statewide Total	33.5%	66.5%
Percentage Increase 1980–1989	14.7%	5.4%
Share of Statewide Growth: 1980–1989	55.6%	44.4%
Per Capita Income in 1989	\$18,835	\$15,297
Average Annual Growth: 1980–1989	12.0%	10.4%
Total Employment in 1989 (Full & Part Time)	271,944	443,175
Share of Statewide Total: 1989	38.0%	62.0%
Percentage Increase: 1980–1989	45.0%	23.2%
Share of Statewide Growth: 1980–1989	50.3%	49.7%
Proprietors' Share of Total Employment: 1989	17.2%	18.1%
Percentage Increase in Prop.: 1980–1989	87.6%	49.8%
Average Earnings per Wage & Salary Job: 1989	\$20,188	\$17,991
Percentage Increase: 1980–1989	70.0%	61.8%
Average Earnings per Proprietor: 1989	\$15,232	\$15,129
Percentage Increase: 1980–1989	41.3%	43.9%

economic performance between southern Maine and the rest of state. The incidence of small business and self-employment consistently has been found to be more closely linked to rural than urban economies. In that regard, the southern Maine/rest-of-Maine dichotomy appears to be an urban/rural comparison, and in 1980 the rest of Maine had a higher proportion of self-employed persons (14.9% compared to 13.2% in southern Maine). But as with most other measures, the number of self-employed grew faster in southern Maine, thus reducing the difference by almost half. Average proprietor incomes in southern Maine and the remainder of the state have not portrayed characteristics of divergence, having remained roughly equal over the past decade.

This apparent convergence in proportional numbers of proprietors is a reflection of the faster growth rate of small business in southern Maine. Interestingly, this trend is the opposite of typical patterns that are evident in comparisons of rural and urban proprietorships. (The typical diverging trend is depicted in Figure 1.) The atypical north-south convergence in Maine suggests the following: (1) that any relative advantage afforded to counties

Table 8, Changes in the number of establishments, employees, and wages in Maine industries, 1981 to 1991.

	----- Southern Maine -----				----- Rest of Maine -----			
	Employers	Employees	Wages	Ave. Wage	Employers	Employees	Wages	Ave. Wage
<b>1981</b>								
Agr.	194	995	10,816,276	10,871	357	3,577	35,933,259	10,046
Min. & Cons.	1,204	6,199	91,239,013	14,718	2,147	11,583	176,004,326	15,195
Manuf.	534	32,070	473,026,520	14,750	1,523	81,501	1,224,826,501	15,028
Trans.	327	5,889	115,133,498	19,551	885	10,178	167,974,087	16,504
Whlsl.	580	7,788	127,953,707	16,430	1,591	11,167	166,559,923	14,915
Retail	2,537	27,673	221,741,695	8,013	5,133	43,211	343,145,358	7,941
Services	2,887	28,679	312,490,153	10,896	5,105	47,859	480,016,715	10,030
Total	8,946	117,946	1,482,376,467	12,568	17,858	217,441	2,696,836,605	12,403
<b>1991</b>								
Agr.	253	1,336	21,578,559	16,152	541	4,290	64,934,616	15,136
Min. + Cons.	1,664	7,706	178,452,941	23,158	2,957	14,474	312,571,964	21,595
Manuf.	616	27,327	723,588,897	26,479	1,655	67,821	1,714,506,366	25,280
Trans.	413	7,218	200,092,203	27,721	1,285	14,060	347,600,699	24,723
Whlsl.	831	10,138	285,260,940	28,138	1,892	13,347	329,923,135	24,719
Retail	3,244	42,678	557,716,687	13,068	5,669	60,704	707,444,266	11,654
FIRE	888	13,883	428,321,987	30,852	1,211	10,554	234,006,092	22,172
Services	4,385	47,562	983,972,776	20,688	6,907	69,917	1,261,866,492	18,048
Total	12,294	157,848	3,378,984,990	21,407	22,117	255,167	4,972,853,630	19,489
<b>Percentage Change</b>								
<b>1981-1991</b>								
Agr.	30.4	34.3	99.5	48.6	51.5	19.9	80.7	50.7
Min. + Cons.	38.2	24.3	95.6	57.3	37.7	25.0	77.6	42.1
Manuf.	15.4	-14.8	53.0	79.5	8.7	-16.8	40.0	68.2
Trans.	26.3	22.6	73.8	41.8	45.2	38.1	106.9	49.8
Whlsl.	43.3	30.2	122.9	71.3	18.9	19.5	98.1	65.7
Retail	27.9	54.2	151.5	63.1	10.4	40.5	106.2	46.8
FIRE	30.0	60.4	229.5	105.4	8.4	26.2	128.6	81.2
Services	51.9	65.8	214.9	89.9	35.3	46.1	162.9	79.9
Total	37.4	33.8	127.9	70.3	23.8	17.3	84.4	57.1



*Figure 4. The convergence of proprietorships between southern Maine and the rest of the state.*

outside of southern Maine by their relatively greater number of proprietors is eroding; and (2) that the stronger economic performance of southern Maine has its basis in more than the differential growth of rural and urban economies (Figure 4). The latter observation implies that the locational effects of southern Maine's proximity to the greater Boston economy may play an important role in that region's growth.

An examination of industry-specific growth of small businesses, in southern Maine and elsewhere, is unremarkable except in one important respect. The number of small businesses that are not classified in any specific industry category increased dramatically between 1982 and 1989. Especially among small businesses, the number of undefined enterprises has made that a dominant small business sector—ranked fourth largest of ten industry categories. The importance of this phenomenon and the policy implications that it presents should be emphasized. The businesses that are placed into this category are those whose products are so new and/or different as to not fit within any of the more than 1000 existing standard industrial classifications. Moreover, their growth to prominence among other industries is evident only among the small



business sector, and their rates of increase in both southern Maine and elsewhere is similar. Indeed, they have grown slightly faster and are relatively more important outside of southern Maine. Finally, their proportional role in the Maine economy appears to be highly sensitive to overall economic conditions. Following several years of rapid growth during the 1980s, the number of unclassified businesses was reduced by nearly one-half between 1989 and 1990; employment associated with the unclassified sector was diminished by more than one-half. These characteristics fit Beesley and Hamilton's (1984) definition of a small firm "seedbed" where volatility resulting in high startup and failure rates is the norm, but from which future growth firms emerge.

For policymakers, the role of entrepreneurs in Maine's economy over the past decade is important for several reasons. First, the apparently strong link of growth in southern Maine to external economic forces distorts the basis for policy formulation and dilutes the impact of policy interventions for statewide economic growth. Second, a high degree of "seedbed" entrepreneurial activity appears to have emerged among the small business sector that is of nearly equal importance throughout all areas of the state. Finally, the high level of "seedbed" activity among the smallest firms, coupled with the highest relative growth rates found in medium-sized businesses emphasizes the entrepreneurial gap that is defined by the consistently low rates of new incorporations.

Although studies of job generation continually point to new and small businesses as the creator of new jobs, the bulk of total employment at any one time is disproportionately located among medium and larger firms. It is the expansion of presently small- and medium-sized businesses that will provide most of the jobs that will be existence in the future (Birch 1987). There is evidence that a base of entrepreneurial small firms is emerging in Maine, and that a fast growing and competitive sector of medium-sized firms already exists. The lack of competitiveness among large firms and the low rate of incorporations should be an area of concern for future job growth.

The factors that affect the ability of entrepreneurial businesses to expand are those that typically are included in studies of state business climates. These include direct measures of business-related costs, indirect costs in the form of government regulation and permitting requirements, and less tangible factors such as quality of life. Since 1980, various studies of state business climates have ranked Maine anywhere from the top half of states to the bottom quarter (Alexander Grant & Company 1987; Rose 1981). A more recent study relates a simple measure of direct business costs

in the fifty states to the level of job growth between 1989 and 1991. The six states with the highest costs of doing business (based on wages, electricity rates, and taxes) experienced job losses on average of 2.7%. Low-cost states averaged a 2.0% increase in jobs. Maine had the sixth highest cost index in the country, and lost 2.6% of its jobs. Other high cost states included New York, Massachusetts, New Jersey, California, and Connecticut. The lowest cost states, most of which like Maine are more rural than urban, were Utah, Missouri, South Dakota, Wyoming, Tennessee, and Texas (Anonymous 1993).

This most recent study lends credence to the perennial argument that high costs of doing business in Maine negatively affect opportunities for economic growth. Rather than create a state industrial policy that targets specific industries, state policymakers may be better served by identifying factors that constrain the growth and expansion of businesses in Maine, regardless of industry. Concentrating on reducing costs common to most businesses, such as those associated with labor costs, energy costs, taxes, governmental regulation, and environmental permitting has several advantages over industrial policy. First, reducing costs for all Maine businesses would not have the effect of increasing the economic divergence that likely would occur by directing development efforts on high-wage high-growth industries that are disproportionately located in southern Maine. In fact, finding ways to alleviate the traditional costs of doing business may have a greater impact in manufacturing industries which are still the dominant economic sector in most of the state. The basis for most calls to focus on improving the business climate is its strong relation to growth in manufacturing employment. Second, to the extent that certain costs of doing business are partially "fixed", that is the costs do not vary greatly with size of business, there may be a disproportionate impact upon smaller businesses. Issues such as taxation and compliance with government regulatory and permitting requirements have been shown to have a greater relative impact upon smaller businesses (US Congress 1979). Addressing this issue may provide a measure of support to the state's entrepreneurial economy.

## SUMMARY AND CONCLUDING OBSERVATIONS

Competitiveness, and the economic growth that flows from it, has become a central feature of economic development policy throughout much of the United States of America. Policymakers seeking strategies to increase productivity as the basis for competitiveness and higher standards of living have focused increasingly

upon smaller businesses as the stimulus for economic growth. To generate continually rising rates of economic growth, however, requires a steady flow of technological innovations and associated advancements in human capital. Entrepreneurial economies that possess the potential to serve as a wellspring of new initiatives hold the promise for a sustainable source of innovation. As the state of Maine grapples with strategies for taking part in the changing global economy, Maine's transition toward an entrepreneurial economy may provide the basis for a new competitiveness.

The 1980s brought about a period of fundamental restructuring in the Maine economy as new manufacturing industries gained prominence, existing traditional sectors were revitalized, some mature industries virtually disappeared, services emerged as a dominant industry, and a new broadened presence in international markets arose. Since then, income growth has stalled, Maine's economic ranking has declined, and the state has lost a substantial portion of the jobs that were gained during the preceding decade. A key test of the state's ability to move beyond its present plateau of economic performance will be the emergence from within of a heightened level of innovation spurred by entrepreneurship.

Creation of new businesses has long been perceived as a measure of economic fortune and the foundation for societal growth and prosperity. Throughout the country, the jobs that have been created during the past decade are found in smaller and medium-sized companies. An analysis of changes in business establishments in Maine suggests that the most competitive size firms in the state during the 1980s were those with between 5 and 99 employees. The number of smaller size businesses grew less rapidly and were not as competitive. However, the rapidly increasing number of unclassified enterprises whose products are new and/or different has made that a dominant small business sector. At the opposite end of the size spectrum, large businesses in Maine contributed little to the state's growth through relative competitiveness, and the rate of new business incorporations in Maine has been the lowest in New England every year since 1981.

For policymakers, firm formation, failure, and competitiveness in Maine's regionally and industrially diverse economy have important implications for future development strategies. Historical patterns of development have shaped the regional economies of the state, and the ensuing irregular distribution of sectoral employment can result in statewide development policy having uneven impacts. The regional economic divergence between the southernmost counties and other parts of the state which created concern at the end of the 1970s has continued to widen, and specific policy

recommendations that do not consider regional variations will serve to further exacerbate the discrepancies.

Among the highlights of this study are the following:

- The fundamental restructuring of Maine's economy during the 1980s has created the potential for future relative prosperity. Among the key elements required to capitalize upon that potential will be a dynamic entrepreneurial economy and the innovations that derive from it.
- Maine cannot rely upon the benefits of external research and development activity to sustain statewide economic growth. Spillover effects of technological innovations originating in southern New England have not provided significant economic benefits outside of York and Cumberland counties.
- The divergence of economic prosperity between southern Maine and the rest of state which first generated concern in the late 1970s and early 1980s has not subsided. By most measures, the southernmost parts of the state continued to experience more rapid economic growth throughout the 1980s.
- In York and Cumberland counties, per capita income is nearly 24% higher and average earnings are more than 12% greater than in the rest of the state. Over 70% of the new jobs created in the highest paying sector of Maine's economy between 1982 and 1989 were in those two counties. A statewide development policy for the future that concentrates on encouraging expansion of selected high-wage, high-growth industries probably will intensify the existing economic divergence between southern Maine and the rest of state.
- Rural communities traditionally have had a relatively greater reliance on small businesses than urbanized areas. However, evidence suggests that some portion of the higher self-employment is a reflection of the lack of alternative employment opportunities in rural areas and not the result of an inherently more dynamic entrepreneurial economy.
- A vital base of innovative entrepreneurship appears to be emerging evenly among the small business sector throughout Maine. An improved understanding of this activity may provide the foundation for a more geo-

graphically balanced policy for entrepreneurial development.

- Despite the restructuring that has taken place within Maine's economy, the traditional factors usually associated with the costs of doing business are still important in the state's manufacturing-oriented economy, and may have a disproportionately greater impact upon smaller businesses. Alleviating the costs of doing business in Maine has the potential to promote economic growth evenly in all areas of state.
- Additional attention needs to be focused on determining why Maine consistently has the lowest rate of new incorporations in New England. This is particularly important in light of the emerging entrepreneurial activity among small businesses and the rapidly growing and competitive base of medium-sized businesses.
- The "seedbed" component of Maine's small business sector may be an important source of innovation and growth oriented enterprises. Additional research into the characteristics of these businesses is needed to develop a better understanding of their potential contribution to the state's economy. In particular, the efficacy of small firm networking strategies should be examined as one approach for stabilizing the turbulence that is evident within this segment of Maine's economy.
- Comparisons of the two southern Maine counties with the rest of the state provide clear evidence of distinct regional economies that are experiencing different rates of economic growth. Efforts to further delineate sub-regional economies in the fourteen county region beyond southern Maine are legitimate, but should be undertaken in a way that addresses the needs of statewide policy development.

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